

Ecological Entomology

VOLUME 19 · 1994

EDITORS

M. Begon

D. J. Thompson

EDITORIAL ADVISERS

M. Auerbach S. A. Corbet D. W. Davidson

J. P. Dempster W. A. Foster H. C. J. Godfray

D. T. Gwynne J. H. Lawton R. H. Smith

BLACKWELL SCIENTIFIC PUBLICATIONS

Oxford London Edinburgh Boston

Melbourne Paris Berlin Vienna

© 1994 Blackwell Scientific Publications Ltd. Authorization to photocopy items for internal or personal use or the internal or personal use of specific clients is granted by Blackwell Scientific Publications Ltd for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the stated fee per copy is paid directly to CCC, 27 Congress Street, Salem, MA 01970, U.S.A. Special requests should be addressed to the Editor. 0307-6946/94 \$10.50.

Contents

VOLUME 19, NUMBER 1, FEBRUARY 1994

Published 1 February 1994

MICHEL BAGUETTE and GABRIEL NÈVE

- Adult movements between populations in the specialist butterfly *Proclissiana eunomia* (Lepidoptera, Nymphalidae) 1-5

MARC-ANDRÉ MARTIN, NAOMI CAPPUCCINO and DOMINIC DUCHARME

- Performance of *Symydobius americanus* (Homoptera: Aphididae) on paper birch grazed by caterpillars 6-10

PAUL EADY

- Intraspecific variation in sperm precedence in the bruchid beetle *Callosobruchus maculatus* 11-16

DAN T. QUIRING

- Influence of inter-tree variation in time of budburst of white spruce on herbivory and the behaviour and survivorship of *Zeiraphera canadensis* 17-25

N. O. M. RAVENSCROFT

- The feeding behaviour of *Carterocephalus palaemon* (Lepidoptera: Hesperidae) caterpillars: does it avoid host defences or maximize nutrient intake? 26-30

NATHAN E. RANK and JOHN T. SMILEY

- Host-plant effects on *Parasyrphus melanderi* (Diptera: Syrphidae) feeding on a willow leaf beetle *Chrysomela aeneicollis* (Coleoptera: Chrysomelidae) 31-38

PETER STILING

- Coastal insect herbivore populations are strongly influenced by environmental variation 39-44

JANNE SUOMELA and ANNA NILSON

- Within-tree and among-tree variation in growth of *Epirrita autumnata* on mountain birch leaves 45-56

JAMES K. WETTERER

- Forager polymorphism, size-matching, and load delivery in the leaf-cutting ant, *Atta cephalotes* 57-64

MASAKO YAFUSO

- Life history traits related to resource partitioning between synhospitalic species of *Colocasiomyia* (Diptera, Drosophilidae) breeding in inflorescences of *Alocasia odora* (Araceae) 65-73

BOAZ YUVAL, MERRY L. HOLLIDAY-HANSON and ROBERT K. WASHINO

- Energy budget of swarming male mosquitoes 74-78

Short Communications

KONRAD FIEDLER

- Lycaenid butterflies and plants: is myrmecophily associated with amplified hostplant diversity? 79-82

R. KUNDU and A. F. G. DIXON

- Feeding on their primary host by the return migrants of the host-alternating aphid, *Cavariella aegopodii* 83-86

HIDEKI UENO

- Fluctuating asymmetry in relation to two fitness components, adult longevity and male mating success in a ladybird beetle, *Harmonia axyridis* (Coleoptera: Coccinellidae) 87-88

G. H. WALTER and J. S. DONALDSON

- Heteronomous hyperparasitoids, sex ratios and adaptations 89-92

H. C. J. GODFRAY and M. S. HUNTER

- Heteronomous hyperparasitoids, sex ratios and adaptations: a reply 93-95

VOLUME 19, NUMBER 2, MAY 1994

Published 2 May 1994

- MARTIN I. BROOKES and ROGER K. BUTLIN
Population structure in the small ermine moth *Yponomeuta padellus*: an estimate of male dispersal 97-107
- CHARLES W. FOX and MARC TATAR
Oviposition substrate affects adult mortality, independent of reproduction, in the seed beetle *Callosobruchus maculatus* 108-110
- EDWARD F. CONNOR, ROBERT H. ADAMS-MANSON, TIMOTHY G. CARR and MICHAEL W. BECK
The effects of host plant phenology on the demography and population dynamics of the leaf-mining moth, *Cameraria hamadryadella* (Lepidoptera: Gracillariidae) 111-120
- A. F. G. DIXON and P. KINDLMANN
Optimum body size in aphids 121-126
- SIMON M. FRASER and JOHN H. LAWTON
Host range expansion by British moths onto introduced conifers 127-137
- L. P. LOUNIBOS
Geographical and developmental components of adult size of neotropical *Anopheles* (*Nyssorhynchus*) 138-146
- V. C. MORAN, J. H. HOFFMANN, F. A. C. IMPSON and J. F. G. JENKINS
Herbivorous insect species in the tree canopy of a relict South African forest 147-154
- ULRICH G. MUELLER and M. DENISE DEARING
Predation and avoidance of tough leaves by aquatic larvae of the moth *Parapoynx rugosalis* (Lepidoptera: Pyralidae) 155-158
- DAVID NESTEL, FRANZISCA DICKSCHEN and MIGUEL A. ALTIERI
Seasonal and spatial population loads of a tropical insect: the case of the coffee leaf-miner in Mexico 159-167
- VOJTECH NOVOTNY
Relation between temporal persistence of host plants and wing length in leafhoppers (Hemiptera: Auchenorrhyncha) 168-176
- GRAHAM N. STONE
Activity patterns of females of the solitary bee *Anthophora plumipes* in relation to temperature, nectar supplies and body size 177-189
- I. A. PEARSALL and S. J. WALDE
Parasitism and predation as agents of mortality of winter moth populations in neglected apple orchards in Nova Scotia 190-198
- N. E. STAMP and M. D. BOWERS
Effect of temperature and leaf age on growth versus moulting time of a generalist caterpillar fed plantain (*Plantago lanceolata*) 199-206

VOLUME 19, NUMBER 3, AUGUST 1994

Published 1 August 1994

- YORAM AYAL
Time-lags in insect response to plant productivity: significance for plant-insect interactions in deserts 207-214
- M. BASS and J. M. CHERRETT
The role of leaf-cutting ant workers (Hymenoptera: Formicidae) in fungus garden maintenance 215-220

ALEX R. KRAAIJEVELD and NICOLE N. VAN DER WEL Geographic variation in reproductive success of the parasitoid <i>Asobara tabida</i> in larvae of several <i>Drosophila</i> species	221-229
D. T. QUIRING and E. W. BUTTERWORTH Genotype and environment interact to influence acceptability and suitability of white spruce for a specialist herbivore, <i>Zeiraphera canadensis</i>	230-238
ATHAYDE TONHASCA Jr and DAVID N. BYRNE The effects of crop diversification on herbivorous insects: a meta-analysis approach	239-244
DESSIE L. A. UNDERWOOD Intraspecific variability in host plant quality and ovipositional preferences in <i>Eucheira socialis</i> (Lepidoptera: Pieridae)	245-256
G. R. VALLADARES and S. E. HARTLEY Effects of scale on detecting interactions between <i>Coleophora</i> and <i>Eriocrania</i> leaf-miners	257-262
TH. S. VAN DIJK On the relationship between food, reproduction and survival of two carabid beetles: <i>Calathus melanocephalus</i> and <i>Pterostichus versicolor</i>	263-270
P. G. WILLMER, A. A. M. BATAW and J. P. HUGHES The superiority of bumblebees to honeybees as pollinators: insect visits to raspberry flowers	271-284
JACK J. WINDIG, PAUL M. BRAKEFIELD, NICO REITSMA and JOHN G. M. WILSON Seasonal polyphenism in the wild: survey of wing patterns in five species of <i>Bicyclus</i> butterflies in Malawi	285-298
<i>Short Communication</i>	
GEORGE E. HEIMPEL Virginity and the cost of insurance in highly inbred Hymenoptera	299-302
VOLUME 19, NUMBER 4, NOVEMBER 1994	
<i>Published 1 November 1994</i>	
CATHERINE E. BACH Effects of herbivory and genotype on growth and survivorship of sand-dune willow (<i>Salix cordata</i>)	303-309
HELENA BYLUND and OLLE TENOW Long-term dynamics of leaf-miners, <i>Eriocrania</i> spp., on mountain birch: alternate year fluctuations and interaction with <i>Epirrita autumnata</i>	310-318
MICHAEL BOOTS and MICHAEL BEGON Resource limitation and the lethal and sublethal effects of a viral pathogen in the Indian meal moth, <i>Plodia interpunctella</i>	319-326
EDWARD F. CONNOR and MICHELE J. CARGAIN Density-related foraging behaviour in <i>Closterocerus tricinctus</i> , a parasitoid of the leaf-mining moth, <i>Cameraria hamadryadella</i>	327-334
HANS DAMMAN Defence and development in a gregarious leaf-mining beetle	335-343
ANDREW FOGGO, MARTIN R. SPEIGHT and JEAN CLAUDE GRÉGOIRE Root disturbance of common ash, <i>Fraxinus excelsior</i> (Oleaceae), leads to reduced foliar toughness and increased feeding by a folivorous weevil, <i>Stereonychus fraxini</i> (Coleoptera, Curculionidae)	344-348
PAUL E. HATCHER, NIGEL D. PAUL, PETER G. AYRES and JOHN B. WHITTAKER The effect of a foliar disease (rust) on the development of <i>Gastrophysa viridula</i> (Coleoptera: Chrysomelidae)	349-360

G. G. HOWLING, J. S. BALE and R. HARRINGTON	
Effects of extended and repeated exposures to low temperature on mortality of the peach-potato aphid <i>Myzus persicae</i>	361-366
V. G. NEALIS and P. V. LOMIC	
Host-plant influence on the population ecology of the jack pine budworm, <i>Choristoneura pinus</i> (Lepidoptera: Tortricidae)	367-373
JAY A. ROSENHEIM and MARC MANGEL	
Patch-leaving rules for parasitoids with imperfect host discrimination	374-380
DAVID H. SIEMENS, BARBARA E. RALSTON and CLARENCE DAN JOHNSON	
Alternative seed defence mechanisms in a palo verde (Fabaceae) hybrid zone: effects on bruchid beetle abundance	381-390
VINTON THOMPSON	
Spittlebug indicators of nitrogen-fixing plants	391-398
<i>Short Communication</i>	
NAOMI CAPPUCCINO and MARC-ANDRÉ MARTIN	
Eliminating early-season leaf-tiers of paper birch reduces abundance of mid-summer species	399-401

